

THE GAME FISHES OF CANADA





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of CANADA

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SMALL MOUTHED BLACK BASS

THE GAME FISHES OF CANADA



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*The color plates herein are reproduced from specimens in
the collection of the Royal Ontario Museum of Zoology.*

PREFACE

BOTH to the sportsman who cultivates the ancient and honorable art of angling and to the friend of nature who wants to know more about the inhabitants of Canadian waters, this booklet is especially dedicated.

For a great many years particular sections of Canada, whether of the Atlantic or Pacific coasts, the Great Lakes or provincial inland lakes and streams, have been well-known to sportsmen who have come, seen, sometimes conquered, and, invariably we hope, have gone away filled with goodwill and enthusiasm. But we have had no simple authoritative account of the game fishes of the Dominion such as would prove useful for identification, perhaps also to provide on occasion material for a half-hour of contemplation, or further "to point a moral or adorn a tale." That this is now possible is because of the fact that we have had within recent years more studies being carried out upon the habits, variation, and distribution of the species themselves, and also more development of the technical branches of water-color, modelling, and mechanical reproduction as exemplified by the excellent illustrations appearing herein.

It may be of interest to the reader that comparatively few species of fishes, either fresh-water or marine, are exclusively of Canadian or northern distribution. Some are widely distributed in North America, while others have close counterparts in northern Europe and Asia. Peculiarities of distribution depend upon circumstances of past geological history and upon various factors having to do with the suitability of environment or the adjustability of animals to it. It is probable that there are more than 550 species of fishes inhabiting Canadian waters, of which perhaps more than 150 live in fresh water. They vary in size from minute species of minnows scarcely more than an inch in adult length to the lordly sturgeon of several hundred pounds and many marine fishes of similar size. The twenty or so species, recognized by everyone as game fishes, constitute a mere handful of species as compared with the general series. The study of the various species, the variations they show in their particular environments, the parts they play in the general balance of nature, the ways in which they affect, favorably, as food, unfavorably, as enemies or competitors, the welfare of game fishes, is in itself a fascinating pastime and highly instructive from the point of view of helping to maintain the supply.

Perhaps the most lasting satisfaction of angling, because the spirit of it is so strongly imbedded in human nature, is that derived from delving into the mystery and uncertainty of the unknown. While the biggest fish is likely always to be the biggest wish so far as the angler is concerned, it is quite probable that the absent evasive big one has been and will continue to be a greater source of imaginative enthusiasm than the trophy of the mounted panel. The same is true of the study of fishes. Familiarity with the lives of fishes not only provides knowledge that we can use to good advantage, but also it broadens our sympathies and commands our interests because the intricate byways of nature lead continually to the unknown.

Canada as a whole has often been spoken of as the last great refuge of North American game animals. In many ways at least this is true. It is because the northern life zones, so productive of the hardy vigorous elements of animal life, lie in a country as yet new in development and containing vast areas of rock and forest fastnesses. And now, within a few years, industrial expansion has necessitated the construction of a veritable maze of transportation lines which, incidentally or otherwise, have placed thousands unspoiled and little frequented hunting and fishing grounds within easy reach of the great centres of population.

Of late thoughts of a graver kind have come to us. Will the great fishing areas of Canada withstand the drain of excessive fishing? Many signs are in evidence that they will not. Fortunately, Canadian waters generally, and with few exceptions, still abound in game fishes, so that only thoughtlessness or indifference can do much damage for perhaps years to come. Fortunately also, throughout North America, the lesson of the "fished out" water has been well learned. The intelligent sportsman will in all probability not be found wanting when seized of the fact that, for a brief period of vacation time, conservation is his most particular business. There is satisfaction in the assurance that while we have none to waste or wantonly destroy we have plenty for all. It would indeed be well if we were to take to heart the remark of a certain experienced northern guide who, when remonstrated for not pulling in a snagged fish hand over hand, said simply "Even a fish has rights."

B. A. Bensley

Director of the Royal Ontario Museum of Zoology;
Head of the Department of Biology, University of Toronto

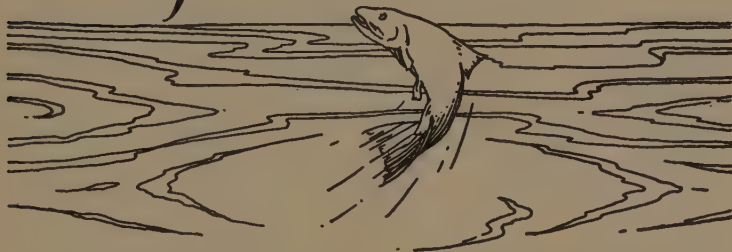


LARGE MOUTHED BLACK BASS



MASKINONGE

THE GAME FISHES *of* CANADA



OF all sportsmen, Nature has been most considerate of the angler. Because there is a game fish for every species of angler.

The big game hunter has to face much the same conditions, whether he goes after the white tailed deer or whether he climbs mountains after goats. The wildfowler must sit in his blind, though Nature provides a slight variation in the speed of flight between the canvasback and the blue-bill.

But game fish!

The portly victim of city living, whom life denies all other sport, may sit in the padded stern of a boat and troll or cast for muskies, pike, wall eyes.

The high-strung professional man, lawyer or doctor, whose spirit craves the sanctuary of the glen, can battle his hours away amidst the valley's tangle to seek the trout.

Men with no aptitude whatever but only the will, may place themselves in the hands of a guide and meet that great knight in bronze armor, the small mouth.

And sportsmen who have advanced themselves to the highest peak of the art of angling do not come to the end—for even when they have caught the hardest of all fishes to catch, they have only to make harder the method of catching, and start at the beginning again.

The salmon and trout family have probably given mankind more open-air exercise than any other family of game fish. The Atlantic Salmon is without question the lord of all freshwater fishes not merely because of his great size, but because, on the end of a delicate line, he is the most active and violent creature imaginable, his leaps being not merely upward plunges like a musky's or a small-mouth's, but a hurling of his body sometimes many feet distance through the air. The steelhead and the rainbow trout are very like the true salmon in the excitement and frenzy of their fighting. But all the trout are beautiful and dwell amid such pure and undefiled surroundings that trout fishers who use the delicate fly tackle and artificial flies are amongst the elite of the broad angling brotherhood.

The next most definite cult amongst anglers are those who devote themselves to muskies. Size is an important factor in the esteem in which muskies are held, but there is a vigor and violence about this fish also which commends it to the man who likes to win control over violence with frail and delicate implements.

But the true genius of the sport of angling is not merely in the great variety of the game fish but in the practically unlimited range of conditions surrounding the sport. It is the hazard of rock and rapid in salmon and trout fishing, of weed patch and stump in bass and pike fishing, and which challenge the courage and wit of the angler, which vary with every fish. The situation develops with a suddenness unknown in any other sport and it works itself out in an element over which man has no sensible control.

Fishing at its best is a solitary vice, as Byron said, and whether on a padded boat-cushion or amidst the infinite discomfort of some fly-infested riotous mountain stream, the angler is achieving a release from the familiar monotones of civilized life which could not, this side of the last river, be much more complete.

The GAME FISHES of CANADA

SMALL-MOUTHED BLACK BASS

(*Micropterus dolomieu*)

THIS fish is probably the outstanding fresh-water game fish in America. Dr. James A. Henshall's classic description of it is unique:

"He is plucky, game, brave, unyielding to the last. He has the arrowy rush and vigor of a trout, the untiring strength and bold leap of the salmon, while he has a system of fighting tactics peculiarly his own. I consider him, inch for inch and pound for pound, the gamest fish that swims."

In the cool, vital waters of Canada, the small-mouthed bass is at its supreme best.

It prefers cold, clear, rocky streams, but is at home in countless lakes, frequenting rocky shoals, especially where there is some current.

The small-mouth is found in limited areas of Quebec, but is widely distributed throughout Ontario. The Georgian Bay and the great rivers such as the French flowing into it, constitute the wild and rocky habitat most favorable to this gallant, square-rigged fish. From the Georgian Bay across the Kawartha system, through the Rideau chain to the St. Lawrence is the principal distribution belt of the small-mouth, though it is also found in great abundance in Lake Erie and to a less extent in Lakes Huron and Ontario. North of the Georgian Bay it usually occurs in small and isolated areas.

The small-mouthed bass is a shore fish, rarely found in deep water and preferring a depth of six to ten feet in still water; and in fast water any depth that is convenient.

Like other fish, its color varies with its surroundings, those taken in fast, clear water or in the limpid water of the open Georgian Bay being of a much more glorious bronze color than those taken in quiet, inland waters.

Its favorite food is unquestionably minnows and the fingerlings of any tribe of the finny nation, but its stock food, however inferior for bait, consists of crayfish and the fish does not spurn insects when available. Unlike its large-mouthed cousin it does not make a profession of hunting frogs and though it has earned a well-merited reputation for fastidiousness in the matter of frogs, it will usually take with avidity the young of the leopard frog common on the beaches in August or detached frogs' legs.

Oddly enough the fish has an inordinate fondness for earthworms though they are not native to a large part of its range, and seems to prefer small, active worms, especially the ringed type of manure worms rather than the large ones if inactive on the hook.

The principal method of fishing the small-mouthed bass in Canada is with live minnow bait, or with worms or crayfish. Baitcasters have fairly consistent luck fishing with deep-going or surface lures and spinners. And even the fly caster, using rods with plenty of power and fuzzy lures, takes his toll of the bronze back, though generally in rivers and amidst fast water. The great virtue of the small-mouthed bass is, that though taken on artificial lures or on live bait, his spectacular fighting brings him to the top almost invariably, where his frequent leaps and his unforeseen plunges and rushes give the angler the utmost in thrills.

The bass spawns in Canada at a time that varies with the temperature, usually early in June, which means that the male bass is still guarding the nest when the season



GREAT NORTHERN PIKE



YELLOW PICKEREL

opens. There is a strong sentiment developing amongst sportsmen against fishing the shores and gravelly shallows where the males are on duty, until well into July.

The majority of small-mouthed bass taken are under three pounds. In the cold waters of Canada, while they are unquestionably gamier, they do not attain the nine pound weight which is reported by "Field and Stream" to be a record from a Southern State. But four pounders are quite common and five to six pounders not infrequent in Canada's inland lakes. In 1924 and 1926, small-mouthed bass of over seven pounds won the prize offered by the "Toronto Daily Star." (*Illustration, Frontispiece*)

LARGE-MOUTHED BLACK BASS

(*Aplites salmoides*)

BECAUSE, in the middle and southern states, the large-mouthed bass attains a very large size and a corresponding sluggishness and unwillingness to do battle, a tradition has grown up that the large-mouth is not much of a game fish.

In Canada's cool waters, the large-mouthed bass is a game fish of the first rank. There are numbers of Canadian sportsmen who actually prefer the assurance of battle on bait-casting tackle and surface or semi-surface lures with the large-mouthed bass to the uncertainties and fickleness of small-mouth fishing.

It rarely jumps and it quits sooner than the small-mouth. But there is nothing in angling that can much excel for sport the savage slash and furious attack of the large-mouth on the near-surface lures commonly used in bait-casting. As it is caught usually in weedy, stumpy and hazardous waters, its plunging calls for great skill in handling.

The large-mouthed bass is most generously distributed in Ontario. In the lower Great Lakes and the rivers and ponds related to them, throughout the Georgian Bay, Kawarthas and Rideau lakes, and in literally countless inland lakes and ponds of the Province, it is abundant.

It prefers quiet, weedy waters and does not disfavor muddy bottom or even peaty waters. Its habitat is much shallower than the small-mouth's, and like its cousin, it is subject to wide color variation, its numerous names, such as Green Bass, Yellow Bass and so forth, attesting to that range of color. In clear waters, such as the Georgian Bay, where the large-mouth haunts the rushy shallows and bays, it is blackish green above, shading to light green and to yellow on the flanks, down to the yellowish-white belly. In inland waters, the blackish green back shades to greyish green and greyish yellow on the sides.

Its lateral line is clearly marked, as a rule, and the best ready method of distinguishing it from the small-mouthed bass is the fact that the large-mouth's bony upper jaw extends back of the eye, whereas the small-mouth's does not. The large-mouth is, moreover, a much chunkier and heavier fish than the small-mouth, with a disproportionate head, a huge mouth and none of the racy, bronzed beauty of the small-mouth. Despite its weedy habitat, the large-mouth is an excellent food fish and not so subject to parasitic worms, oddly enough, as is its gamier and wilder cousin.

The large-mouth's principal food is minnows and small fish, frogs and insects which abound amidst the weedy shallows. One of the prized incidents of the angler's life is to see a large-mouth hunting a frog off the lily pads. A frog will make the mistake of hopping from one pad to another. The large-mouth spots the movement and promptly nudges with its nose the pad on which the frog sits, causing the frog to leap to another pad. The bass follows and repeats this nudging process until the terrified frog either miscalculates the jump or comes to the end of all jumping and falls into the water. There is a tremendous boil—and one frog less!

The large-mouth naturally offers the bait-caster the greatest of sport. Plugs, spinners and weedless lures cast



SPECKLED TROUT



LAKE TROUT

skilfully amidst the lily pads or along the rushes or close against the overhanging bushes of inland lakes bring forth the characteristic plunge and smash of the striking bass. Fly casters find large-mouthed bass much more interested in flies than are the small-mouth.

Under three pounds would be the average weight of large-mouths caught, but five and six pounders are quite common, much more so than small-mouths. Eight pounders are records for Canadian waters. (*Illustration, page 9*)

MASKINONGE

(*Esox masquinongy*)

LIKE the two basses, the range of the maskinonge is restricted to certain localities in eastern and central Canada, and its distribution is even more narrow and limited than that of the small-mouthed bass.

From the Thousand Islands of the St. Lawrence, up the Trent Valley, the Kawarthas, Lake Scugog, Lake Simcoe, the Georgian Bay and thence in isolated localities in Northern Ontario as far west as the Lake of the Woods, the muskie is distributed with a careful hand, as if nature had a full appreciation of its value to the angler.

Perhaps the size to which muskies attain has something to do with it, besides their intrinsic gameness, to inspire the tremendous regard in which this fish is held by a section of the angling fraternity which amounts almost to a cult.

Forty-pounders are not at all uncommon. Twenty-five and thirty-pounders are reported yearly from almost every resort on the maskinonge waters of Canada.

But in addition to the thrill of great size, the muskie is a mighty fish when taken on tackle other than a hand-line hauled behind a boat. It was the bait-caster, using, it is true, powerful rods and heavy lines, who brought out the true sporting qualities of the maskinonge.

Muskies go on the spawning beds immediately after the ice departs in the spring. They scatter their eggs at random in the shallowest of reedy and rushy bays, right up on the flooded land in many cases.

Then they retire to deeper water to feed up after the ordeal of spawning; and they withdraw by July to the deeper waters, rocky ledges and shoals out from the shallow bays where they spawned. The habits of the maskinonge during the dead of summer are something of a mystery. It apparently goes on the feed only at certain times and rarely is it caught with a full stomach. Sometimes trolling in deep water out from weedy shores or off rocky shelves will be fruitful in August. Yet, casting in the fastest rapids of the French River will often result in a tremendous capture at the same season of the year.

It is in September that the best muskie fishing commences. In the latter part of this month the maskinonge starts to come in-shore, probably to feed up against the coming winter. At any rate, by the first of October, the angler no longer trolls the deeps but casts his lure right up against the shore, alongside logs and stumps, amidst the lily pads and rushes, over the gravel and boulders, in two feet or even in one foot of water.

There lies the muskie, hidden, quiet, and when it takes the swiftly-reeled lure, it is with a suddenness and fury that defies description. It leaps and rushes for the open water with a kind of frenzy. The angler has little time to take in his slack.

Of all times of the year to fish the maskinonge, the season when the leaves are turning is the most favorable.

The muskie is easily distinguished from the great northern pike by his coloring. Where the pike has distinct yellowish spots scattered over bluish grey-green sides, the muskie has shadowy vertical bars or blotches of a darker color all along his shimmering grey-green sides; and over his shoulders there is a sheen of bronze.

No final authority for the spelling of the name of this fish has been determined. Muskallunge, muscalonge, muscallunge, maskinonge and so forth, are all popularly abbreviated either to 'muskie' or 'lunge.' The spelling adopted in this book, 'Maskinonge,' is that offered by E. T. D. Chambers of the Quebec Department of Game and Fisheries, who traces the derivation of the word to the Indian 'mashkinonje,' meaning deformed pike. (*Illustration, page 10*)

GREAT NORTHERN PIKE

(*Esox lucius*)

NOWHERE in its vast range in Canada is the great northern pike regarded, by law, as a game fish. It is left to the commercial fisheries, the netsman and the spearer, and in many places is ruthlessly destroyed as a menace to more valued game fish.

The pike is undoubtedly the most ubiquitous fish in Canada. It ranges from Labrador clear across the Dominion to Alaska, thence to Siberia and into Europe, ending up, in England, as a prized game fish.

It is found in almost every conceivable type of water, from the most sluggish ponds to the tremendous tumult of the Nipigon; in luke-warm waters where carp fall asleep to the great lone lakes of the sub-arctics.

It seems to weather all sorts of adverse conditions, for its numbers do not appear to decrease even in the older waters of Canada. It has not the narrow range of its cousin, the maskinonge, but is found both in what is by anglers called "the trout country" and in "the bass country." In its western range, the great northern pike becomes really a northern species and is not known much south of Alaska.

In its spawning habits, the pike is like the maskinonge, going into the shallows immediately on the departure of the ice. But it does not seek such depths as the muskie for its summer habitat, being found in the shallows along

with the large-mouthed bass. It prefers weedy channels, shallow bays, lurking in wait amidst the lily pads and rushes. Yet, like the muskie, the pike will also be found in fast rapids, at the foot of falls, and off deep shelves and rocky ledges. It has no fixed haunts, but is a sort of universal fish, and may be expected almost anywhere.

In the autumn, however, it reverses the maskinonge's custom, for instead of being up against the shore in the shallows, it is generally, at the fall of the year, found in deep water.

The pike is believed to be a voracious feeder and is perhaps justly blamed for heavy depredations on other species of fish. It is not uncommon to find that a pike has made a meal off such an uncomfortable lunch as a rock-bass or sunfish.

The pike, like the large-mouthed bass, is a favorite fish with the bait-caster, because it strikes readily at the type of plugs and lures cast by the short rod. A growing respect for the pike is developing with the increased popularity of the bait-casting tackle.

The average weight of pike in the older waters of Canada is something around five pounds, with ten and twelve-pounders quite common. In the northern lakes, larger specimens up to twenty pounds are met with every season, with certain records, in the remoter northern lakes beyond the usual tourist gamut, of forty-pounders. (*Illustration, page 15*)

YELLOW PICKEREL

(*Stizostedion vitreum*)

IN the naming of this fish, we run foul of popular American terminology. Americans from the east call our great northern pike a pickerel and what we call a pickerel, they call a wall-eyed pike.

Other authorities call it the pike perch and the French-Canadians call it the doré.



RED TROUT OF QUEBEC



RAINBOW TROUT

In any event, the yellow pickerel or wall-eye, is an important game fish, though by no means in a class with bass or trout. Where it excels most of its brethren amongst the game species is in its super-excellence as a food fish.

It is widely distributed throughout the lower Great Lakes region, and lately has invaded the Trent Valley system in large numbers. In countless inland lakes connected by rivers with the Great Lakes it is a popular game fish in the absence of bass or muskies. It is believed to be more susceptible than most other species to artificial propagation.

Except in certain limited localities, it is not regarded in law as a game fish and is captured in tremendous quantities by the commercial fisheries.

It spawns in the spring and runs in great numbers in all the rivers up from the lakes. This is a favorite time to fish for it, very early in the season, where at the foot of falls and in rapid water, it takes spoons and live minnows.

Later in the season, the best places to fish for the wall-eye are at the foot of falls, in swift currents, or, at sunset, around shoals and weed-beds adjacent to fast water, where it appears to repair in search of a bedtime snack of minnows. Bright spoons, live minnows or frogs are the popular baits.

Specimens of twelve pounds are not uncommon in wild waters but three to four pounds would be a good average for the yellow pickerel or wall-eye of Canadian streams and lakes. (*Illustration, page 16*)

SPECKLED TROUT

(*Salvelinus fontinalis*)

WITH the speckled or brook trout we break at last into the great family of the Salmonidae, of which Canada has so many species and such plentiful supplies.

The speckled trout to begin with is not a true trout, but a charr, which, nevertheless, are amongst the most beautiful

and, with one or two exceptions, the gamest of all the Salmonidae.

The speckled trout has the broadest range of any of the trout in Canada. From the Atlantic far up into the hinterland of Northern Ontario and into Manitoba, it is disributed lavishly. Both in the little brooks of the cultivated regions and in such stately torrents as the Nipigon where it attains a huge size, the speckled trout has probably a larger following of sportsmen than any other game fish.

Its beauty, its fighting qualities, its delicacy as a food fish and its habitat in the coldest, purest waters only, amid the most beautiful surroundings, give it a position of pre-eminence amongst all its kind.

The Maritime Provinces, Quebec, Labrador and Ontario have literally countless rivers and streams of every size containing the beautiful fontinalis. Along the Atlantic coast, it exists in great numbers in the famous salmon rivers and grows to several pounds' weight. In Lake Superior, it comes down from the great rivers and dwells actually in the lake itself, and is known locally as a "Coaster." Over the height of land and in rivers emptying into the Albany, it attains a size only exceeded by the Nipigon, which produced the world's record speckled trout of 14½ pounds.

No other species of game fish has such a color variation as the speckled trout. Even in small brooks, trout of sharply distinct color features will be taken, ranging from rich, dark olive-brown with vivid fins and blue-ringed red spots to the palest of silvery olive, with the markings of fin and spot of the most delicate coloration. While the speckled trout puts on all his fine raiment in September preparatory to the spawning season in October and early November, fish from certain waters will at all seasons be of a glorious jeweled color, while those from other regions will be dull. This gives rise to the notion that there are different species, but there is no exception to the rule that in eastern Canada the square-tailed speckled trout is always *Salvelinus fontinalis*.



STEELHEAD TROUT



KAMLOOPS TROUT

Amongst sportsmen, fly fishing is the only approved way of taking the speckled trout although there are anglers who still yank the jeweled beauty from the meadow-brooks with worm or grasshopper, and tourists to the big rivers that flow into Lake Superior find the "cockatouche"—as the sculpin is called in the north country—a deadly bait for big speckled trout. Bait-casting tackle using fancy lures has also accounted for big specimens on the Nipigon and Steel rivers.

In the older and settled regions of the Maritimes, Quebec and Ontario, a trout of over two pounds is considered worthy of sending to the photographer. But in the wild regions of all these provinces, trout of five and six pounds' weight are frequently taken—and on fly rods at that.

The so called Nipigon trout which attains an unusually large size in the famous Nipigon river is a true (*salvelinus fontinalis*) speckled trout distinguished merely for its size and vivid coloration. (*Illustration, page 19*)

LAKE TROUT

(*Cristivomer namaycush*)

WHILE not remotely in a class with the speckled trout or most of the trout which follow, the lake trout deserves special mention at this point because of its wide distribution throughout the regions inhabited by bass as well as by speckled trout.

The lake trout is also commonly called salmon trout. It is the popular commercial fish, caught in enormous quantities in the nets at all seasons of the year in the Great Lakes, throughout eastern and central Canada and in the northern portions of the Western Provinces. It has numerous other local names and, because there is a good deal of variation in its color, gameness, and size as well as in the color of its flesh, from pink to white, there are supposed to be several kinds of lake trout.

But there are not. The little skimpy two or three-pounders that come out of one over-stocked lake and the big, red-fleshed, dark-colored fat beauty that comes from another lake are identical in species, different only in habitat and conditions of living. The "mountain trout," "gray trout," "mackinaw trout," "togue," and the salmon trout of the big lakes are all merely lake trout.

In the Great Lakes they are commonly caught in nets up to a weight of fifty pounds. Nowhere are they regarded in law as a game fish, despite the newest tourist habit of referring to them as "land-locked salmon!" which suggests at least that the tourists respect them as game fish.

In many places in the early spring, and everywhere in the late fall, when they come in shore to spawn, the lake trout may be caught on light sporting tackle, and by bait casting, and even, by enthusiasts, on the fly rod. But during the summer, the lake trout haunts the greatest depths, in over a hundred feet of water if it can be found, and then the method of fishing for it is to troll with copper line and spoon or minnow bait—a method that permits of little sport, from the fish's point of view, at least. (*Illustration, page 20*)

RED TROUT OF QUEBEC

(*Salvelinus marstoni*)

THIS Canadian representative of the Arctic charr of Europe is one of the most beautiful of our game fishes. Its distinguishing features are a marked fork in the tail fin, a body more slender than the speckled trout, and an extremely deep red coloration on the lower sides of the spawning male. Little has been recorded regarding its game qualities. It is said to be found in lakes rather than streams. Some describe it as a deep water fish that will not take the fly, while others say it rises to the fly, leaps repeatedly when hooked and fights desperately.

It is found only in a few lakes in Quebec, although closely related forms (Oquassa trout and Sunapee trout) occur in isolated lakes in Maine and New Hampshire, other close relatives run into salt water, along the Arctic and Labrador coasts, occasionally straying into the Gulf of St. Lawrence. (*Illustration, page 26*)

DOLLY VARDEN TROUT

(*Salvelinus spectabilis*)

THIS is another of our charrs or red-spotted trout. It is common in many of the streams of western America, where it is distinguished by the name of the bull trout. Northwards it abounds in the sea and reaches a weight of ten or twelve pounds. As usual with trout, in small streams and lakes it matures at a size of only a few inches in length. In beauty and gameness it is said to be very similar to its eastern cousin (*Salvelinus fontinalis*) but in many places it is despised because of its reputation of being destructive to the eggs of salmon and trout.

RAINBOW TROUT

(*Salmo irideus*)

THE term "rainbow" is popularly applied to black-spotted trout which show a red or purplish band along the side. Hence an individual trout may be a rainbow at one period of its life and a steelhead at another. Not all rainbows, however, migrate to the sea and become steelheads, for some remain permanently in fresh water either by choice or because they are land-locked. Some of the forms which have been isolated for long ages from their sea-going relatives have developed characteristics by which they may be distinguished from them. There are, therefore, quite a number of types of rainbow trout differing not only in their habits but also in color, gameness and the size to which they grow.

In appearance the rainbow does not belie its name and ranks in point of beauty with the finest of the Salmonidae,

while it is of such a high order of gameness that it challenges the small-mouth bass and endangers the reputation of the Nipigon trout. It has all the verve and power of the trout plus the leaping habits of the salmon and the bass. A sportsman, given an Aladdin's choice of any fishing he wanted in America, would be torn between the salmon of the Atlantic and the rainbow of the Pacific. Trout up to four or five pounds in weight readily take the fly while the larger ones are usually taken with a minnow or by trolling.

Fly-fishing in the big lakes at the mouths of tributary streams and in the eddies and backwashes of swift-flowing rivers, is usually best during the months of June and July.

The rainbow trout of Lake Superior is a steelhead, first introduced by the United States Fish Commission in 1895. This trout is now common at Sault Ste. Marie, and in the spring enters many of the rivers tributary to Lake Superior for spawning purposes. It has also extended to Lake Huron and runs into a number of the rivers emptying into Georgian Bay. In the Sault rapids, where it rises to the fly, it reaches a size of 10 to 15 pounds, and is very highly regarded by anglers because of its gameness, dash and beauty. It has not persisted in many of the smaller streams into which it has been introduced and should not be planted in any waters without careful inquiry to determine whether conditions are likely to be suitable for it and what effect it may have on other species. (*Illustration, page 26*)

STEELHEAD TROUT

(*Salmo gairdneri*)

OF all the game fish of America the steelhead, the rainbow and the Kamloops trout are our closest relatives of the common trout of the British Isles, which has been introduced into some of our waters under the name brown trout.

The steelhead has many characteristics in common with the Atlantic salmon and is much more closely related to it



CUT-THROAT TROUT



ATLANTIC SALMON

than to any of the five species of Pacific salmon. All of the salmon, both Atlantic and Pacific, as well as the steelhead trout, spend the greater part of their lives in salt water but resort to fresh water to spawn. All of the Pacific salmon, however, die after spawning, never returning to salt water. The steelhead, on the other hand, in common with the Atlantic salmon, spawns a number of times, returning to the sea after each spawning migration into fresh water. In the sea the steelhead is bluish above with a faint pinkish tinge along the side and shows comparatively few spots. In fresh water it gradually changes from blue to olive-green above and more and larger spots appear, while the pinkish tinge along the side gives place to a broad red or purplish band. Colored thus it is usually called a rainbow trout. Into some of the rivers of British Columbia there appears to be a number of migrations of steelheads during the year; in others there is only one well-defined migration, that for the purpose of spawning which occurs during winter or early spring. The young steelhead remains in fresh water for some time before descending to the sea. The time spent in fresh water varies from one to several years, and some are believed never to enter salt water, being permanent residents of fresh water. (*Illustration, page 29*)

KAMLOOPS TROUT

(*Salmo kamloops*)

In many of the lakes of British Columbia occurs a trout, closely related to the steelhead, to which the name Kamloops trout has been applied. Being a game fighter, a beautiful fish in appearance and growing to a large size, it is one of the most popular game fishes of the interior waters of British Columbia. The Kamloops trout does not, so far as known, descend to the sea as does its close relative the steelhead, but remains permanently in fresh water. The town of Kamloops, B.C., gives access to many choice waters in which this fish is found. (*Illustration, page 30*)

CUT-THROAT TROUT

(*Salmo clarkii*)

ANOTHER common trout of western America is the cut-throat. It differs in a number of respects from the steelhead-rainbow-Kamloops series of trout previously described. It gets its name from the presence of a deep red coloration on the under side of the lower jaw. It also has teeth on the back of the tongue in addition to the teeth farther forward which all trout possess. As compared with the steelhead and its relatives the cut-throat has a more rounded body, a more pointed snout and a longer head, and its color pattern, especially the extent of spotting is usually different from that of the rainbow and the Kamloops trout. The cut-throat, however, is extremely variable, and from one region to another differs widely in appearance and characteristics. In game qualities it is not usually so highly regarded as the rainbow or the eastern brook trout, but is by no means lacking in those qualities which appeal to the angler. It occurs naturally as far east as the eastern slope of the Rocky Mountains whereas the trout previously described (steelhead, rainbow and Kamloops) were originally confined to waters much nearer the Pacific coast. (*Illustration, page 35*)

BROWN TROUT

(*Salmo fario*)

This is the native trout of Europe but it has been extensively introduced in North America, especially in the United States. It thrives best in clear, cold, rapid streams, and at the mouths of streams tributary to lakes, having much the same habits as our eastern brook trout. Its back and sides are decidedly brown. The back is covered with black spots and the sides with red spots.

The Loch Leven trout which has also been widely distributed in America differs somewhat in color and markings from the typical brown trout but is now considered to be merely a local form of that species.

ATLANTIC SALMON

(*Salmo salar*)

WE come at length to the true salmon tribe and start with the most princely of all, the famous salmon which is identical on the Atlantic coast with the salmon of Britain and northern Europe—perhaps the most prized game fish in the world.

In any event, the stern restrictions regarding its capture and the huge fees paid by sportsmen for leasing stretches of river in which the salmon may be caught apply on both sides of the Atlantic.

Canada has the last of the salmon rivers of America in the Maritime Provinces, in Quebec on the north shore of the Gulf of St. Lawrence and on the Labrador Coast. The majority of them and the best of them are leased at fancy prices by wealthy sportsmen's clubs.

Of the sporting qualities of the Atlantic salmon little need be said. It is a fish of tremendous vigor coming fresh from the sea into the fresh-water rivers to spawn. It leaps and makes long rushes with a fury and frenzy that taxes the skill of the rodsman to the maximum. It takes only the fly, which is offered to it with rods of twelve to sixteen feet in length.

Expert anglers, however, often successfully use light fly rods in angling for this fish, which, of course, lends added zest to the sport.

The Atlantic salmon reaches a weight of fifty pounds, but from fifteen to twenty-five pounds would be the average in the Canadian rivers.

A large part of the life of a salmon is spent in the sea, and there most of its growth takes place, but it comes into fresh water to spawn. The eggs are deposited in the autumn on sand, or gravelly bottoms of shallow stretches of water near the headwaters of rivers. The young fry hatch in spring, and when two or three months old begin to show

vermilion spots and dark vertical bars or parr-marks. At this stage the young salmon is called a "parr." It remains a parr from one to three years, when it descends to the sea, assumes a bright silvery color and becomes a "smolt." It has been learned that in England salmon usually return to fresh water to spawn for the first time after spending two years in salt water. A small number return as grilse after spending one year in the sea, while a few spend as much as four years continuously in the sea before returning to spawn. The Atlantic salmon returns again and again to fresh water to spawn, usually, it is believed, to the same stream in which it was hatched.

Salmon once abounded in Lake Ontario. Whether these were of the marine type or a fresh-water race similar to the ouananiche next described can never now be settled. In early days the Don, Humber, Credit, and other rivers in the vicinity of Toronto, were famous salmon streams. Now salmon seldom come nearer than the Saguenay river in the province of Quebec. The chief causes of the decrease in their numbers were excessive fishing, disturbing the fish on their spawning beds, the pollution of rivers by sawdust, waste materials from factories and other injurious substances and the barring of them by dams. (*Illustration, page 36*)

OUANANICHE

(*Salmo salar ouananiche*)

THIS is the true so-called "land-locked salmon"—and no mere lake trout ever deserved the shadow of the name. For the ouananiche is a blood brother of the great Atlantic salmon in everything—save size and sea-going habit.

It is one of the most justly-famed game fish in the world, but because of its very limited range—the centre of its abundance being Lake St. John in northern Quebec—the ouananiche is not well known to anglers.



OUANANICHE



KING SALMON

The name "land-locked salmon" is a misnomer, since, in most of the waters in which the ouananiche is found, there is direct access to the sea. So that it is choice rather than necessity that makes the ouananiche a fresh-water species.

It does not grow to great size, as salmon go. It is more on the scale of the trout, and it responds best to fly fishing, though spinners will take it as they will take most of the salmo family. (*Illustration, page 41*)

KING SALMON

(*Oncorhynchus tshawytscha*)

ALSO called the tyee or chinook salmon, is the largest of the Pacific salmons and the best of them from the anglers' point of view. It averages about twenty pounds in weight although many very much larger specimens are taken. It is the earliest to "run," entering the coastal rivers in spring. It is said to run only in streams of large size, fed with melting snows. Both the spring and coho salmon will take the fly but trolling is the favorite method for catching them, and considerable numbers are caught by this means in the waters of British Columbia. Off the mouth of the Campbell river, Vancouver Island, light tackle rod-and-line trolling with a lure at a depth of ten to twenty feet is successful and the Tyee Club of British Columbia aims to standardize and encourage the use of light tackle for the capture of Tyee salmon up to 75 pounds in weight. July and August are perhaps, the best months for tyee fishing, just the time when rainbow fishing is likely to fall off a little. (*Illustration, page 42*)

THE GRAYLING

(*Thymallus signifer*)

THIS is allied to the trout, but differs from it in many important characteristics. Its chief distinctive peculiarity is the very large dorsal fin. Grayling are charac-

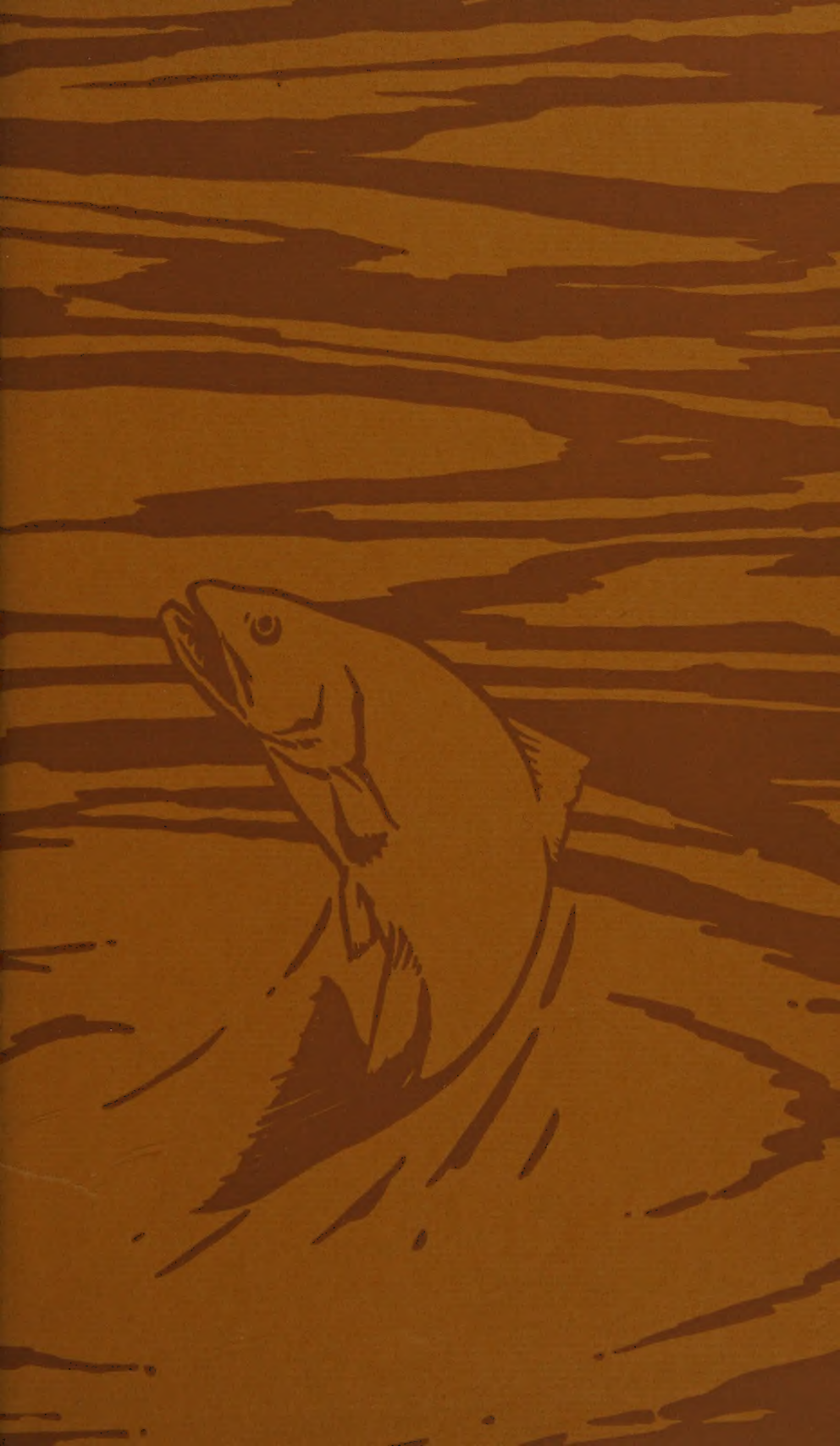
teristically sub-arctic fishes and are found in Europe and Asia as well as America. A few are found in scattered localities farther south. In Michigan the grayling (*Thymallus tricolor*) is now limited to a single stream. Another form is found in western Montana. It is, however, widely distributed in northwestern Canada and in Alaska. By sportsmen the grayling is considered a gamy fish, but is not so strong as the brook trout and perhaps less wary. The Rocky Mountain whitefish (*Coregonus williamsoni*) is often, though erroneously, called grayling.



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